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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/048,020	03/11/2002	Hyuk Lee	0630-1417P	1315

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EXAMINER

FREAY, CHARLES GRANT

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 09/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/048,020

Applicant(s)

LEE ET AL.

Examiner

Charles G Freay

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

Figures 1-5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

The submission of July 25, 2002 did not include the Korean references listed on the PTO-1449. The applicant is requested to include copies of these references for consideration.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 line 3 the phrase "to cover front end" is confusing. The examiner would suggest inserting "a" before "front".

In claim 1 line 5 "contacted/separated to/from" is confusing.

In claim 1 line 5 and 6 it is unclear if the valve is contacted by the piston. As set forth in the disclosure the piston does not contact the valve.

In claim 1 line 8 there is no reference frame for "rear surface". Also throughout the claims there is no reference frame for terms such as front and rear.

In claim 3 the material after "and therefore" is a conclusion and it is unclear what structural limitations are being set forth.

In claim 4 after "which" "an" should be inserted. In claim 4 it is unclear what is meant by the end of the valve being "inserted into the stepped unit. The spring abuts the valve. And it is unclear what is meant by "is formed successively to the stepped unit".

Throughout the claims the descriptions of the various parts and surfaces of the valve as units is confusing (for example, stepped unit in claim 4, plane pressure face unit in claim 8, etc.). The sections and surfaces of the valve body should not be set forth as separate units.

In claim 5 there is no antecedent basis for "wires" and the phrase "is projected on the..." is confusing.

In claim 6 line 2 after "on" "the" should be inserted for clarity.

In claim 8 the description of the pressure face being adhered to the cylinder is confusing. Adhere" sets forth attachment, fastening or gluing. The pressure face is abutted to the cylinder.

In claim 8 the last paragraph is confusing. Further it is unclear which edge is being referred to and what the reference frame for "the center direction" is.

Art Unit: 3746

In claim 10 the phrase "undercutting surface unit formed as biased to" is confusing.

In claims 13 and 14 it is unclear what structural limitations are being added to the apparatus. The claims seem to be setting forth structural details of the manufacturing elements for the device. These limitations do not further limit the valve apparatus.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sidney (USPN 1,951,215) in view of Gruett et al (USPN 5,984,652).

Sidney discloses a reciprocating compressor having a piston 11, a cylinder (1), a discharge cover (9), a conical valve spring (8) and a discharge valve (7). Sidney does not disclose that the spring is wound with a gap of 1 mm so that parts of the spring do not impact other parts of the spring. Further the stepped surface of the discharge cover and pressure and back faces of the valve are not disclosed. Gruett et al discloses a spring biased valve having a conical spring (98) biasing a valve (99), the spring compressing in a non-impacting manner. The valve member having various surfaces including a part for holding one end of the spring and a stepped surface on the other end. At the time of the invention it would have been obvious to one of ordinary skill in the art to use a valve/spring arrangement such taught by Gruett et al in the Sidney devise in order to obtain a more durable valving arrangement.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Smith and Schaefer disclose check valves with conical springs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G Freay whose telephone number is (703)308-0639. The examiner can normally be reached on Monday through Friday 10:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on (703)308-0102. The fax phone numbers for the organization where this application or proceeding is assigned are

Application/Control Number: 10/048,020

Page 6

Art Unit: 3746

(703)872-9302 for regular communications and (703)872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0861.



Charles G Freay
Primary Examiner
Art Unit 3746

CGF
September 12, 2002